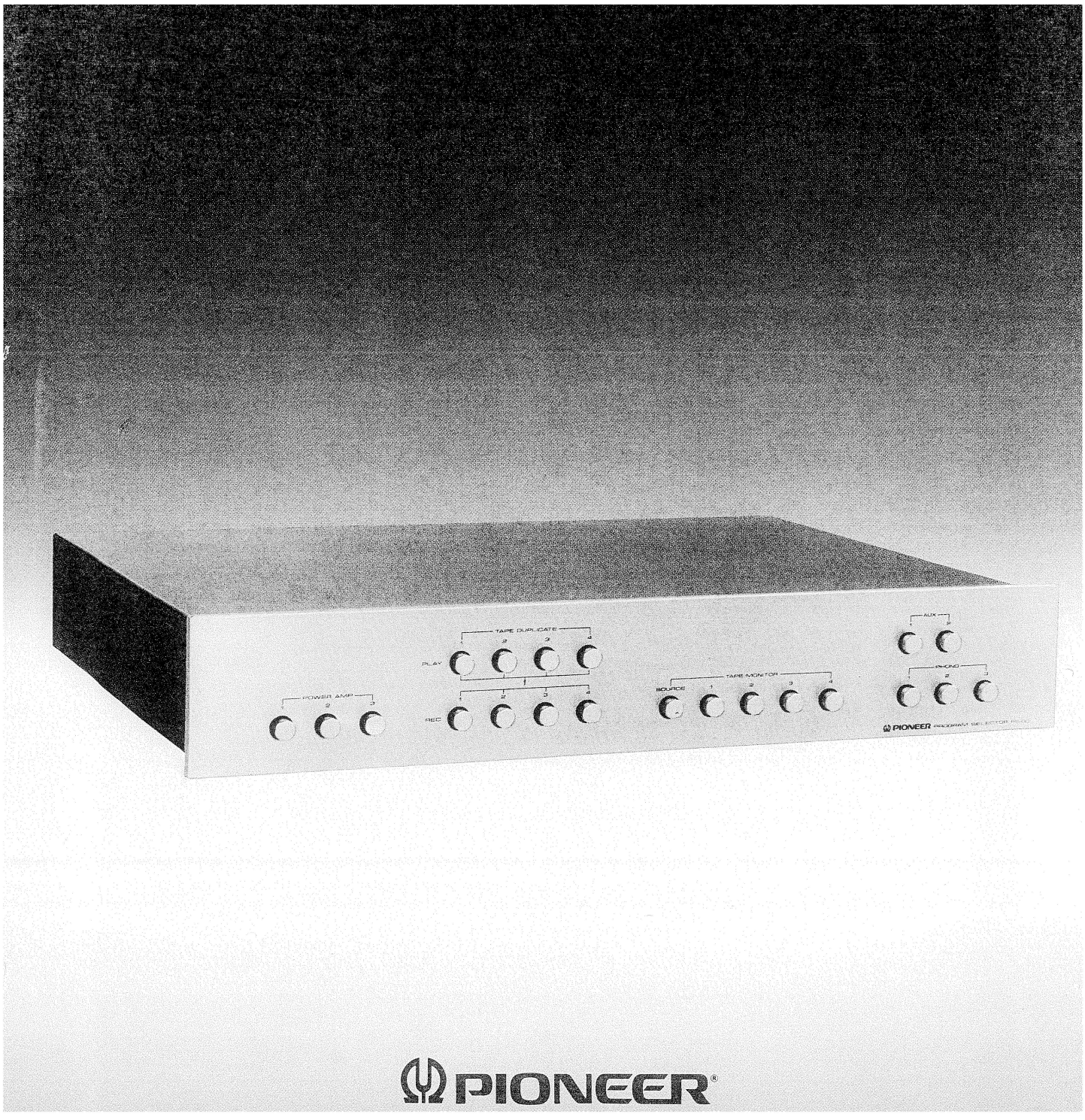
PROGRAM SELECTOR

U-24

SERVICE MANUAL



PIONEER®

CONTENTS

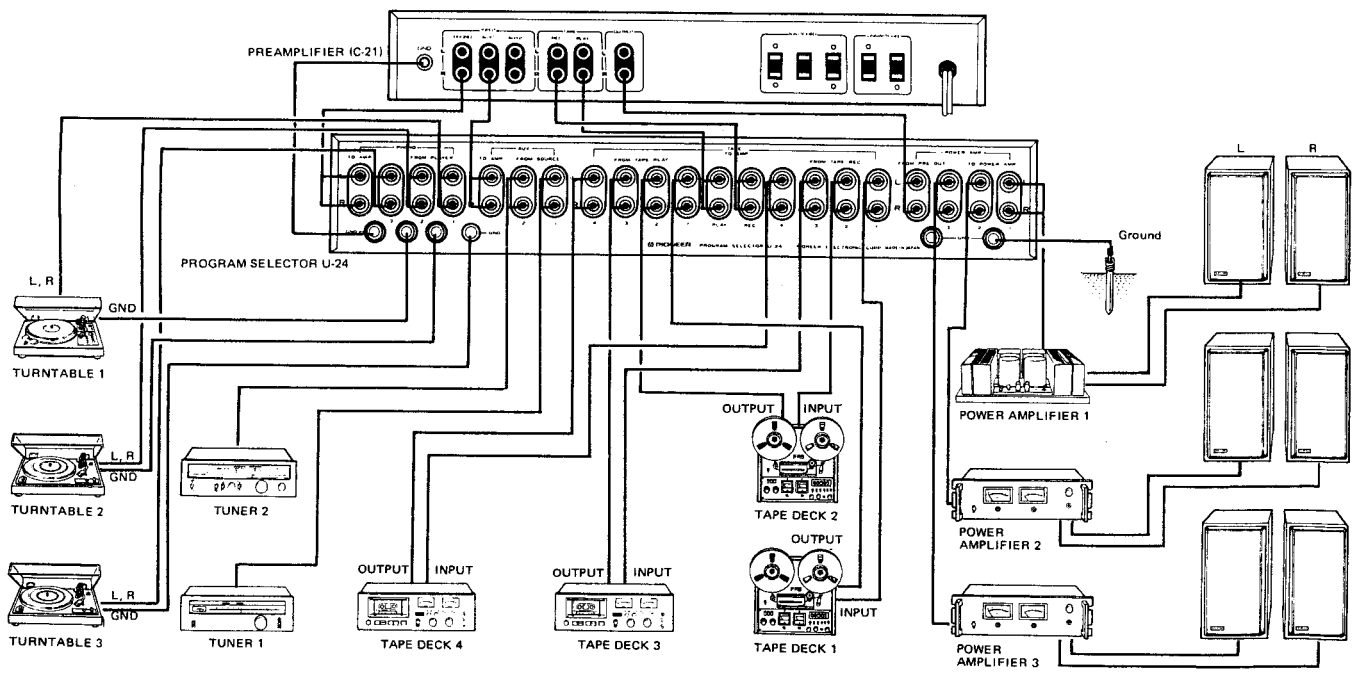
1. SPECIFICATIONS 2
2. CONNECTION DIAGRAM 2
3. FRONT PANEL FACILITIES 3
4. BLOCK DIAGRAM 4
5. CIRCUIT DESCRIPTIONS 5
6. DISASSEMBLY 6
7. PARTS LOCATION
   - 7.1 Front Panel View 7
   - 7.2 Rear View 7
   - 7.3 Top View 8
8. EXPLODED VIEW 9
9. SCHEMATIC DIAGRAMS, P.C. BOARD PATTERNS AND PARTS LIST
   - 9.1 Schematic Diagram 11
   - 9.2 Miscellaneous Parts List 13
   - 9.3 Phono Switch 14
   - 9.4 Power Amplifier Switch 16
   - 9.5 Tape Switch A 18
   - 9.6 Tape Switch Assembly B 21
10. PACKING 23

1. SPECIFICATIONS

Dimensions . . . . . 420(W) x 81(H) x 329(D)mm
16-9/16 x 3-3/16 x 12-15/16in
Weight without package . . . . . 4.4kg (9 lb 11 oz)
with package . . . . . 5.2kg (11 lb 7 oz)
Furnished parts . . . . . Short pin plug: 2
Ground wire: 1
Operating Instructions: 1

NOTE:
Specifications and the design subject to possible modification without notice due to improvements.

2. CONNECTION DIAGRAM



3. FRONT PANEL FACILITIES

POWER AMP SELECTOR SWITCHES

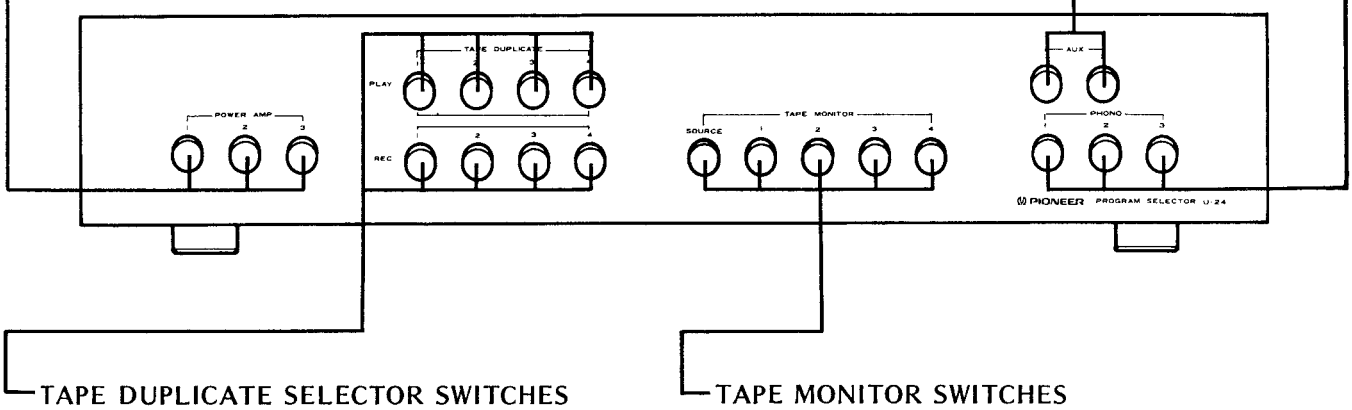
Use these to select up to three power amplifiers connected to the preamplifier. They are interlocking switches and so if you press 1 and then 2, 1 will be released.

AUX SELECTOR SWITCHES

You can use these switches to select two tuners (or cartridge tape players, or TV tuners) which are connected to the preamplifier. These are interlocking switches and so if you press 1, for example, and then 2, 1 will be released.

PHONO SELECTOR SWITCHES

You can use these switches to select three turntables which are connected to the preamplifier. These are interlocking switches and so if you press 1, for example, and then 2, 1 will be released.



TAPE DUPLICATE SELECTOR SWITCHES

Use these switches when duplicating a tape from one tape deck to another and when editing tapes. You can use up to four decks for tape duplication.

TAPE DUPLICATE PLAY (1, 2, 3, 4)

When duplicating, decide which tape deck you are going to use for playback and then press the appropriate switch. These are interlocking switches. For example, if you press 1, it will be released when you press 2. Therefore, remember to press only one switch.

TAPE DUPLICATE REC (1, 2, 3, 4)

When duplicating, decide which tape deck you are going to use for recording, and then press the appropriate switch. These switches are all independent. For example, if you press 2 and then 3 and 4, this will set all three switches. To release, press the switches for a second time. Do not press these switches unless for duplicating. When recording with the TAPE MONITOR SOURCE switch in the ON position, the program source will be recorded on all four decks without having to press the TAPE DUPLICATE REC switches.

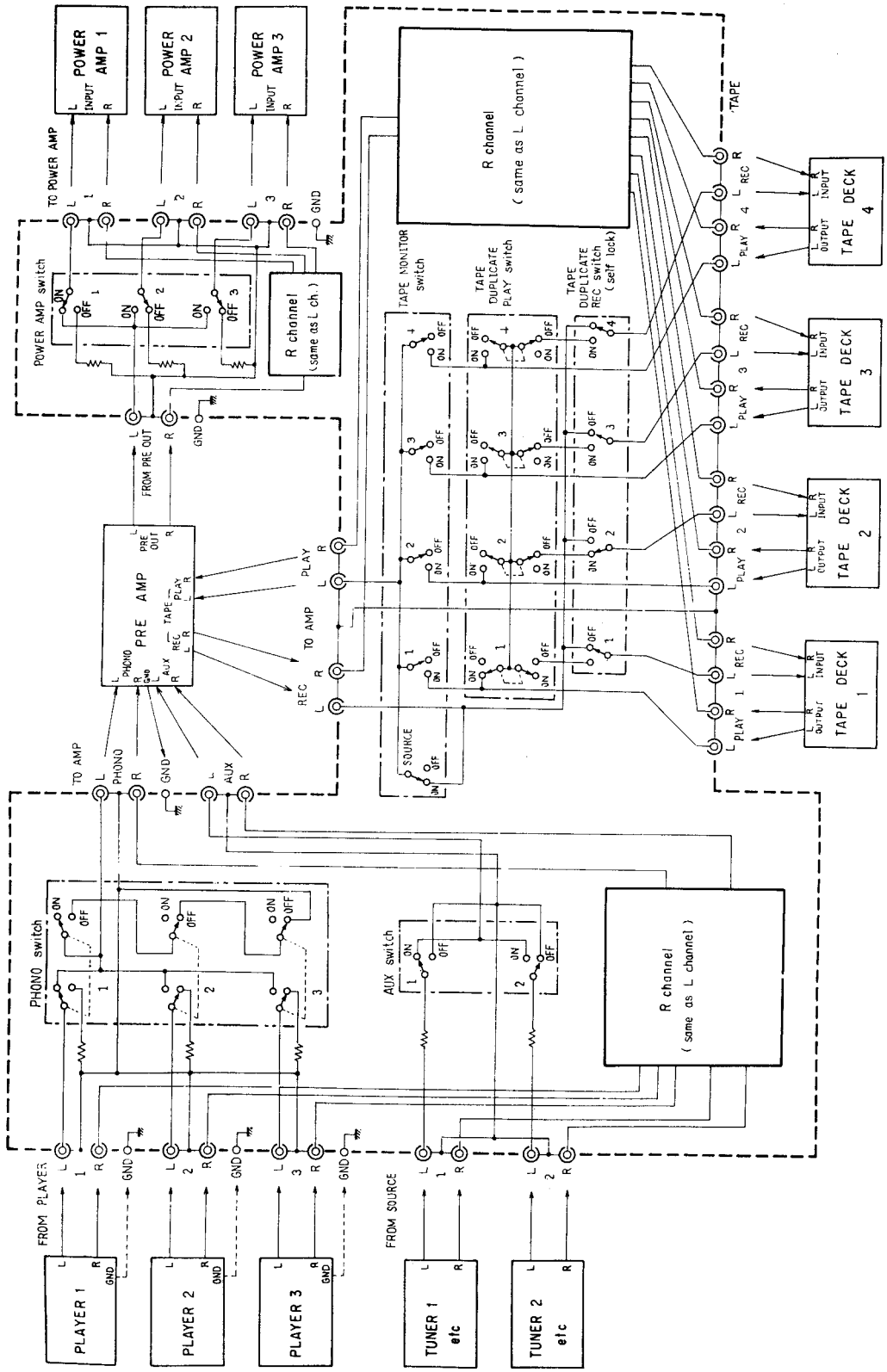
TAPE MONITOR SWITCHES

Press these switches when playing back tape decks, to tape a program source, which are connected to the TAPE (REC, PLAY) 1, 2, 3, and 4 terminals, or when monitoring a recording. Press the appropriate number. Remember to set the TAPE MONITOR switch on the amplifier (or preamplifier) beforehand to the ON position.

NOTES:

- *Be sure to push the TAPE MONITOR SOURCE switch to the ON position when listening to a record or a program on the tuner.*
- *These are all interlocking switches. If you press 1, for example, and then 2, 1 will be released. Therefore, be sure to press just the one switch.*

4. BLOCK DIAGRAM



5. CIRCUIT DESCRIPTIONS

OUTLINE OF CIRCUITRY

The U-24 is a switch box which is designed to increase the range of the pre-amplifier's functions. The block diagram on page 4 shows that the circuitry is composed of switches and resistors, and also that there is no power source. In other words, the circuitry has no active elements.

NOTE:
Remember to connect the unit's ground connector to the pre-amplifier since the input/output ground line 'floats' with respect to the chassis.

PHONO SELECTOR CIRCUIT

The PHONO switches are used to select one of three sets of FROM PLAYER connectors, and they are connected to the PHONO-TO AMP connectors. When these switches are set to the OFF position, then the corresponding FROM PLAYER connectors are grounded through the resistors (100 ohms). Furthermore, when all three sets of connectors are OFF, the PHONO-TO AMP connectors are grounded.
The PHONO switches are make-before-break types.

AUX SELECTOR CIRCUIT

The AUX switches are used to select one of two sets of AUX-FROM SOURCE connectors, and they are connected to the AUX-TO AMP connectors through resistors (2.2 k-ohms). When the AUX switches are set to the OFF position, the corresponding FROM SOURCE connectors are grounded through the resistors (2.2 k-ohms).
When both sets of connectors are OFF, then the AUX-TO AMP connectors become open.
The AUX switches are make-before-break types.

TAPE MONITOR CIRCUIT

The TAPE MONITOR switches are used to select one of four sets of FROM TAPE PLAY connectors as well as a set of TO AMP REC connectors, and they are connected to the TO AMP PLAY connectors. When all five sets of connectors are OFF, the AMP PLAY connectors become open.
The TAPE MONITOR switches are break-before-make types.

NOTE:
When two or more sets of connectors are selected by the TAPE MONITOR switches, the corresponding FROM TAPE PLAY connectors are then connected in parallel, and the TAPE DUPLICATE switches do not work as indicated.

TAPE DUPLICATING CIRCUIT

The PLAY switches are used to select one of four sets of FROM TAPE PLAY connectors (selection at playback end). The REC switches work independently and they can be connected to the required number (between 1 and 4) of FROM TAPE REC connectors (at the recording end). When the REC switches are set to the OFF position, the corresponding FROM TAPE REC connectors are connected to the TO AMP REC connectors. Moreover, the corresponding connectors are not connected even if the REC switches having the same numbers as the PLAY switches are depressed.
The PLAY and REC switches are break-before-make types.

NOTE:
When two or more of the PLAY switches are set to ON, the corresponding FROM TAPE PLAY connectors are connected in parallel, and the TAPE MONITOR switches will not work as indicated. If all four PLAY switches are set to ON, tapes cannot be duplicated.

POWER AMPLIFIER SELECTOR CIRCUIT

The POWER AMP switches are used to select one of three sets of TO POWER AMP connectors, and they are connected to the FROM PRE OUT connectors. When the POWER AMP switches are set to the OFF position, the corresponding TO POWER AMP connectors are grounded through the resistors (620 ohms). When all three switches are set to OFF, then the FROM PRE OUT connectors will become open.
The POWER AMP switches are break-before-make types.

NOTE:
Vibrations are sometimes caused when a multiple number of TAPE MONITOR and TAPE DUPLICATE PLAY switches are set to ON.

6. DISASSEMBLY

Undo the four (A) screws marked in the figure, and slide the top cover off the chassis.

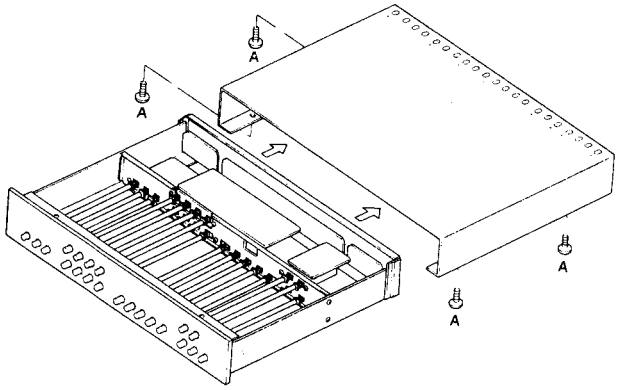


Fig. 1

Remove the eight (B) screws marked in the figure, and then the bottom cover.

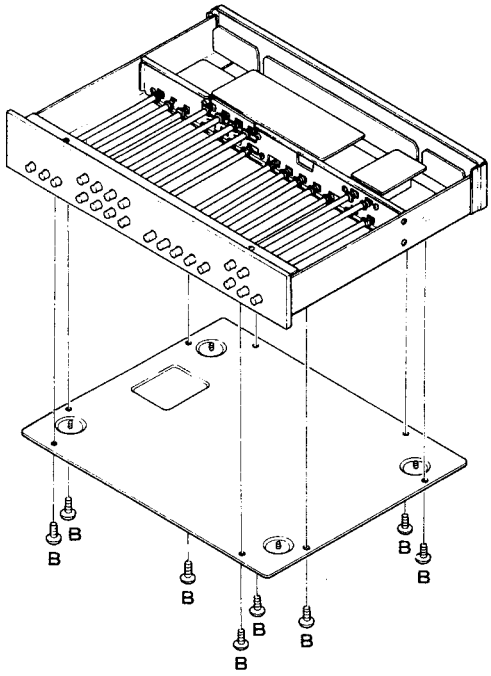


Fig. 2

Pull out the pushbutton knobs from the switches.

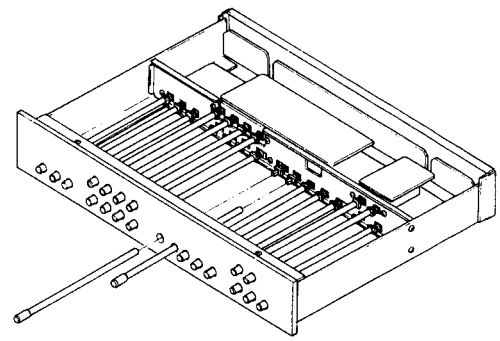


Fig. 3

Remove the two (C) screws both top and bottom and then remove the front panel.

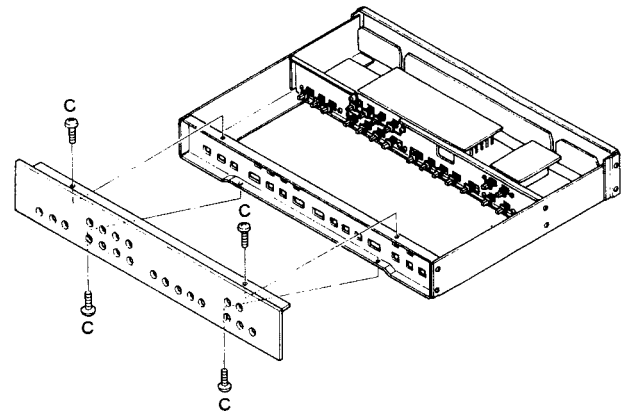
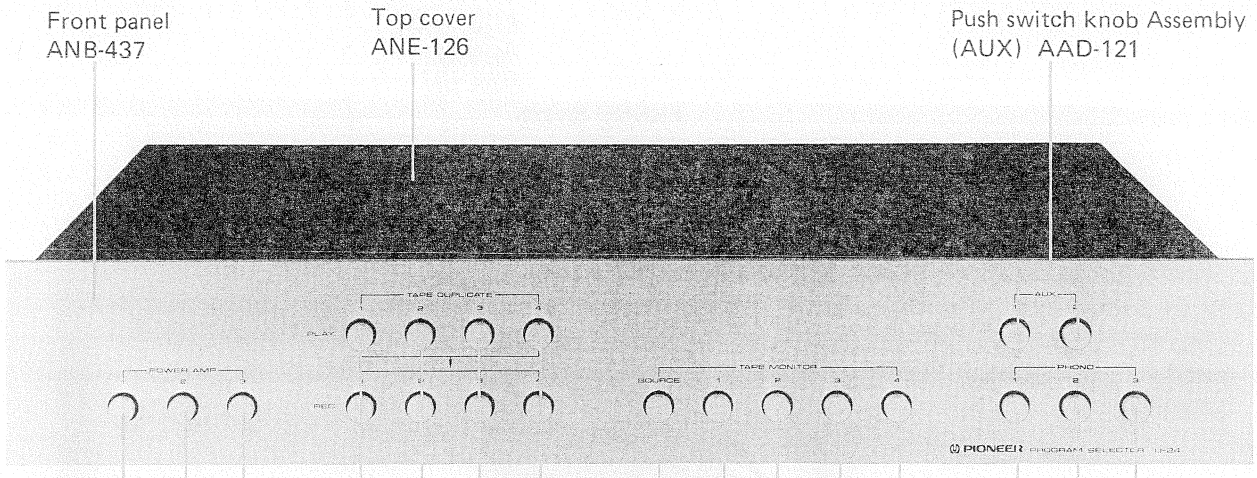


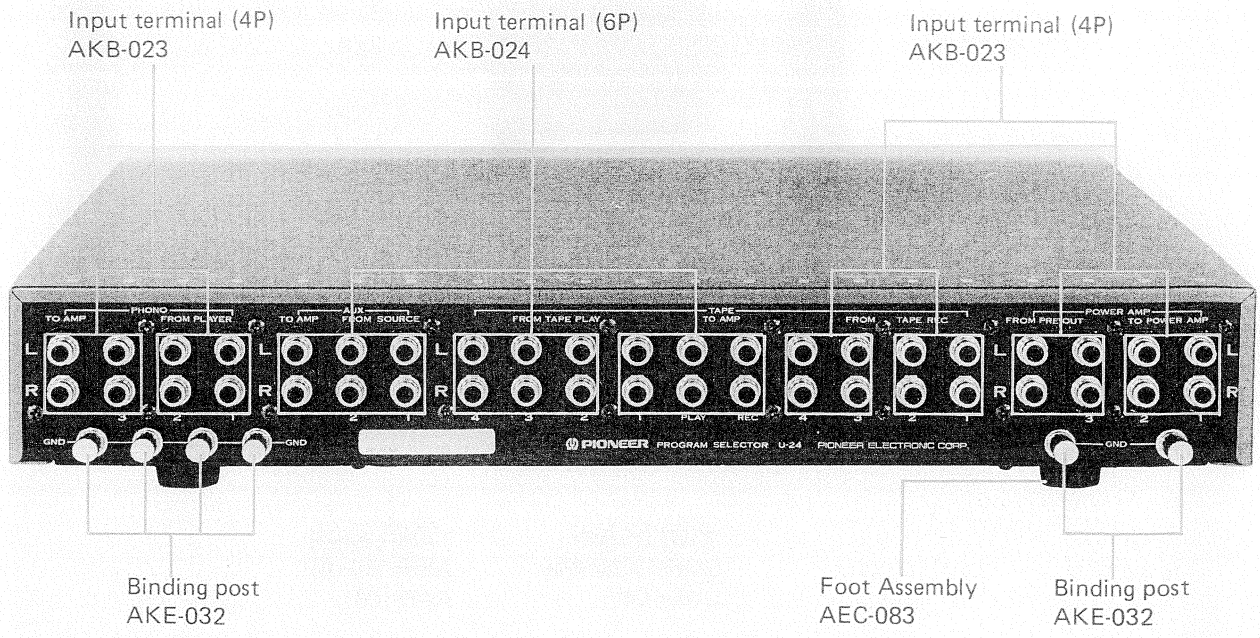
Fig. 4

7. PARTS LOCATION

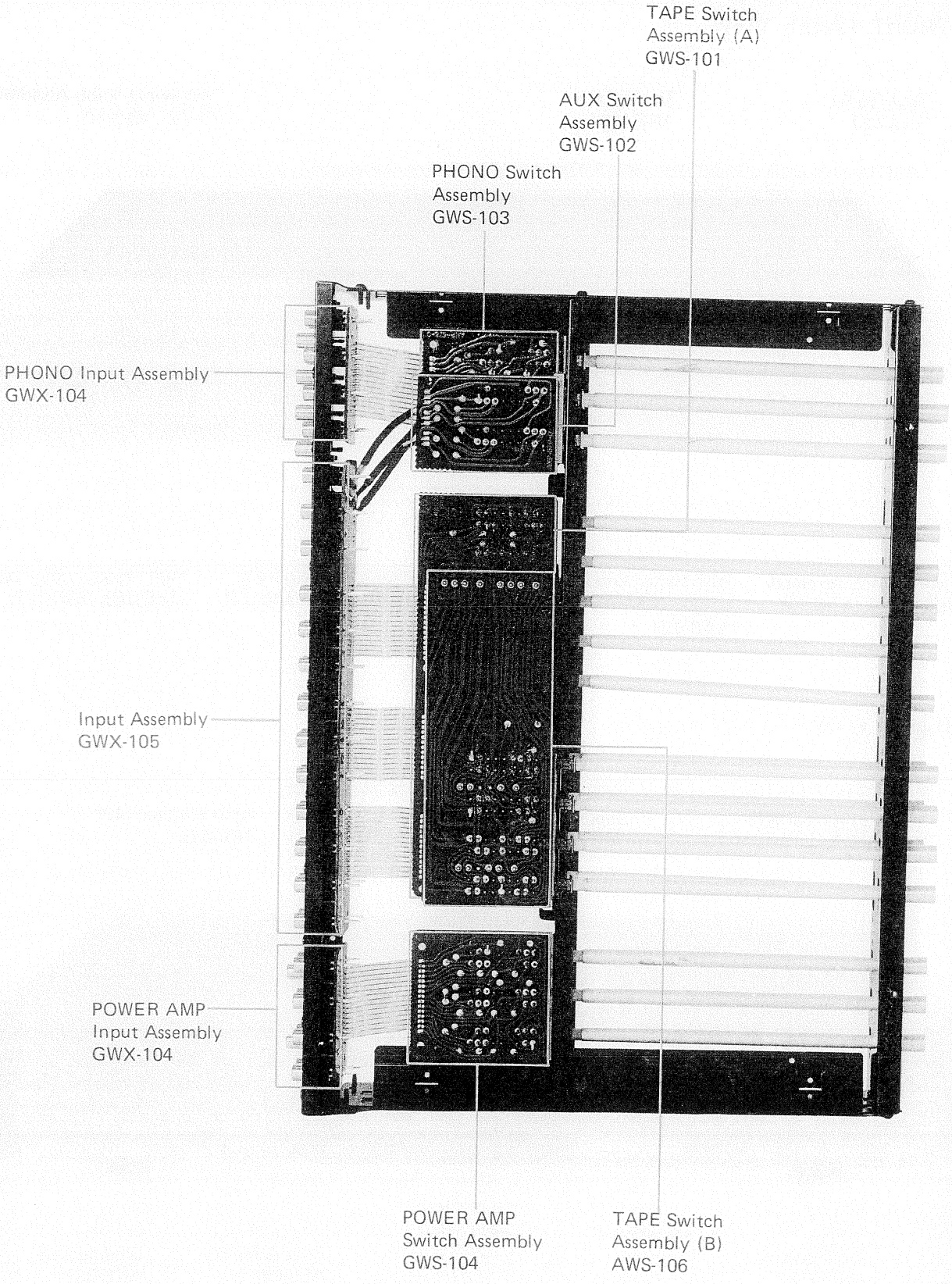
7.1 FRONT PANEL VIEW



7.2 REAR VIEW

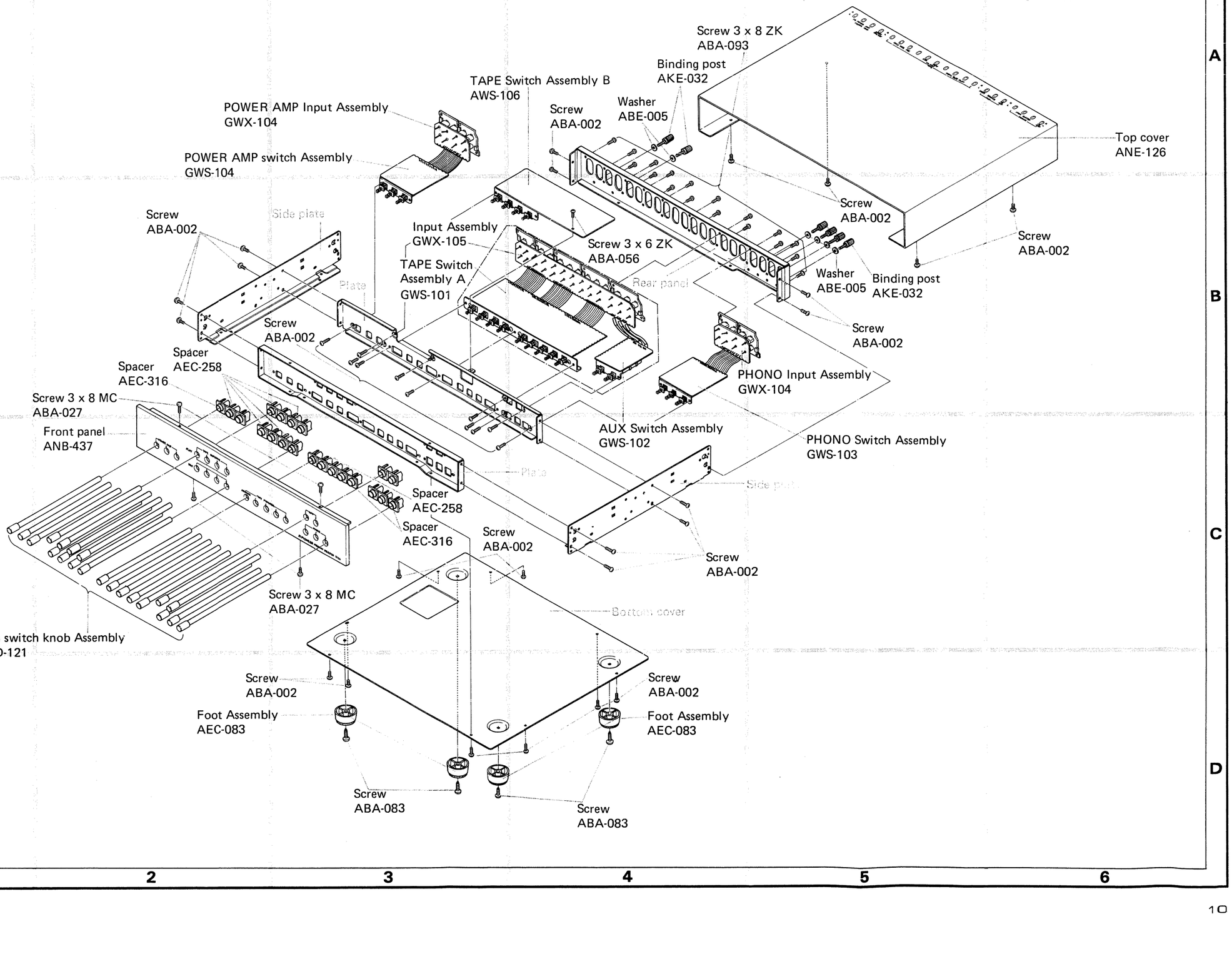


7.3 TOP VIEW


TAPE Switch
Assembly (A)
GWS-101
AUX Switch
Assembly
GWS-102
PHONO Switch
Assembly
GWS-103
PHONO Input Assembly
GWX-104
Input Assembly
GWX-105
POWER AMP
Input Assembly
GWX-104
POWER AMP
Switch Assembly
GWS-104
TAPE Switch
Assembly (B)
AWS-106

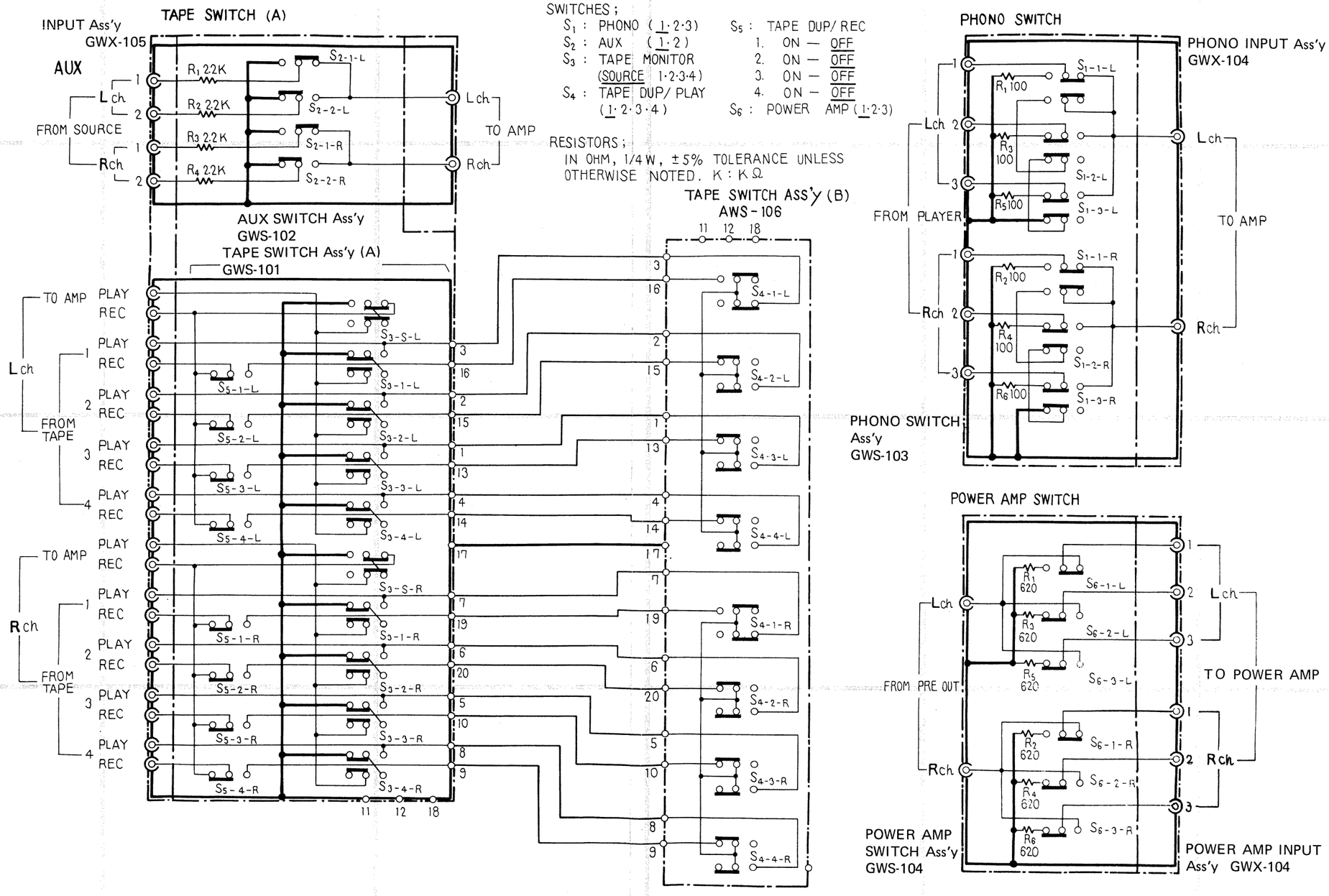
8. EXPLODED VIEW

NOTE:
Parts indicated in green type cannot be supplied.



9. SCHEMATIC DIAGRAMS, P.C. BOARD PATTERNS AND PARTS LIST

9.1 SCHEMATIC DIAGRAM



9.2 MISCELLANEOUS PARTS LIST

NOTE:
- *Capacitors: in μF unless otherwise noted p:pF*
- *Resistors: in Ω, ¼W unless otherwise noted k:kΩ, M:MΩ*

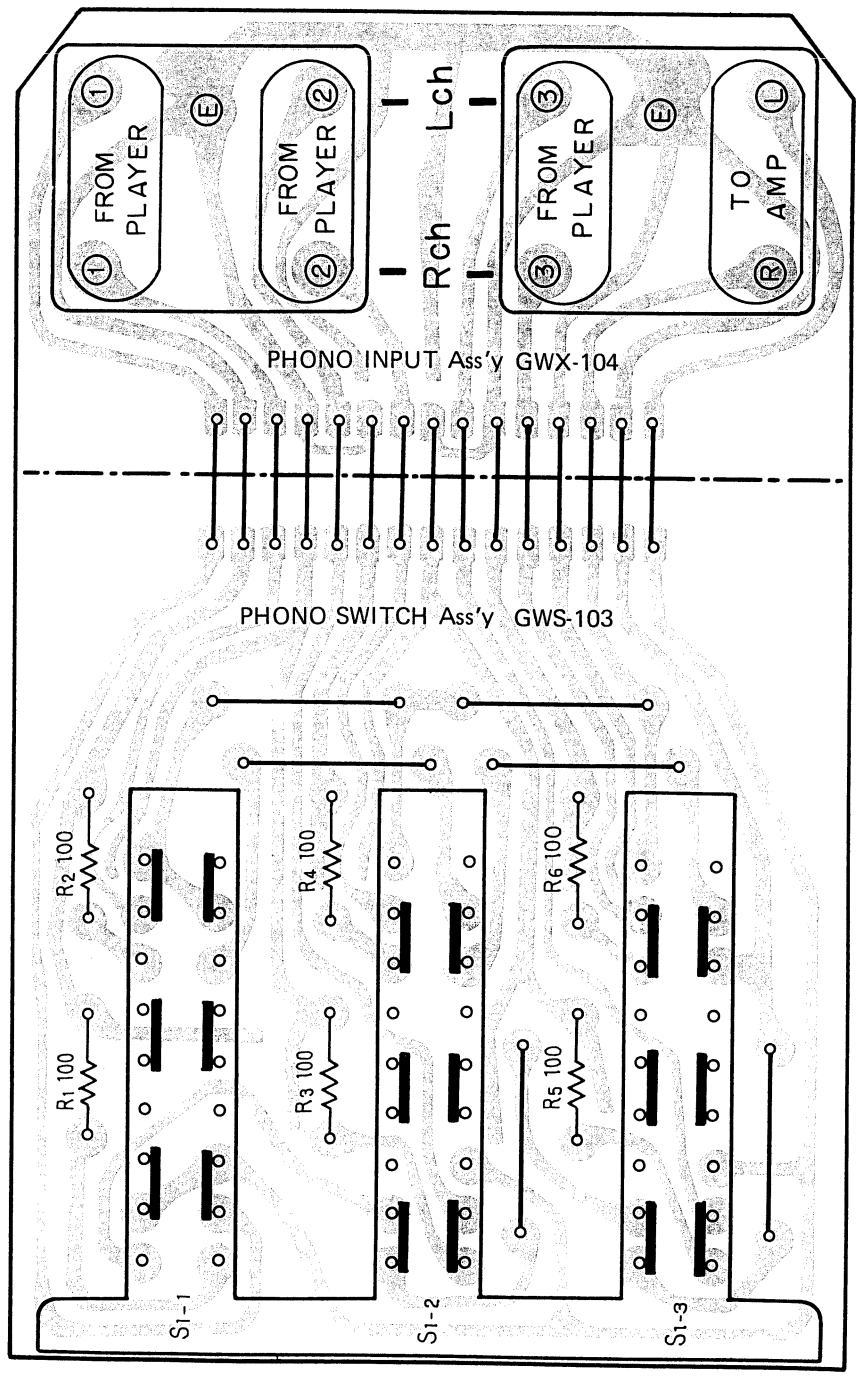
ASSEMBLIES

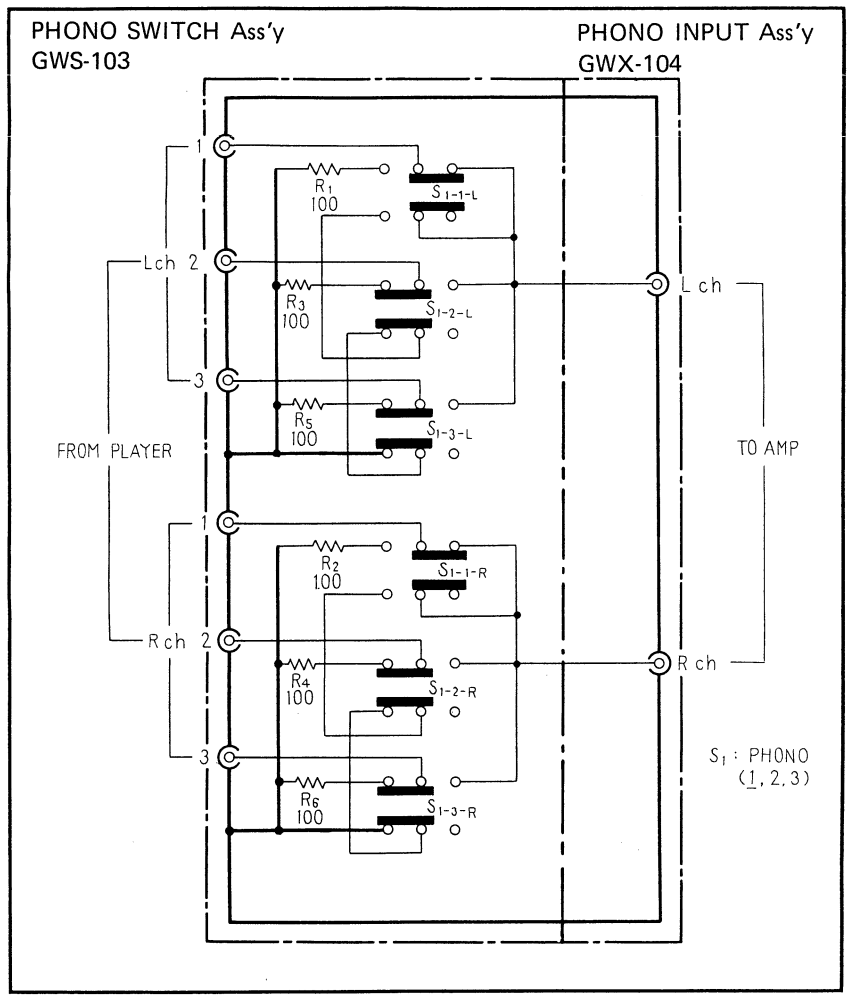
Symbol	Description	Part No.
	PHONO Switch assembly	GWS-103
	PHONO Input assembly	GWX-104
	POWER Amplifier switch assembly	GWS-104
	POWER Amplifier input assembly	GWX-104
	TAPE Switch assembly (A)	GWS-101
	AUX Switch assembly	GWS-102
	Input assembly	GWX-105
	TAPE Switch assembly (B)	AWS-106

OTHER

Symbol	Description	Part No.
	Binding post	AKE-032

9.3 PHONO SWITCH





PHONO SWITCH Assembly (GWS-103)

RESISTORS

Symbol	Description		Part No.
R1	Carbon film	100	RD¼PM 101J
R2	Carbon film	100	RD¼PM 101J
R3	Carbon film	100	RD¼PM 101J
R4	Carbon film	100	RD¼PM 101J
R5	Carbon film	100	RD¼PM 101J
R6	Carbon film	100	RD¼PM 101J

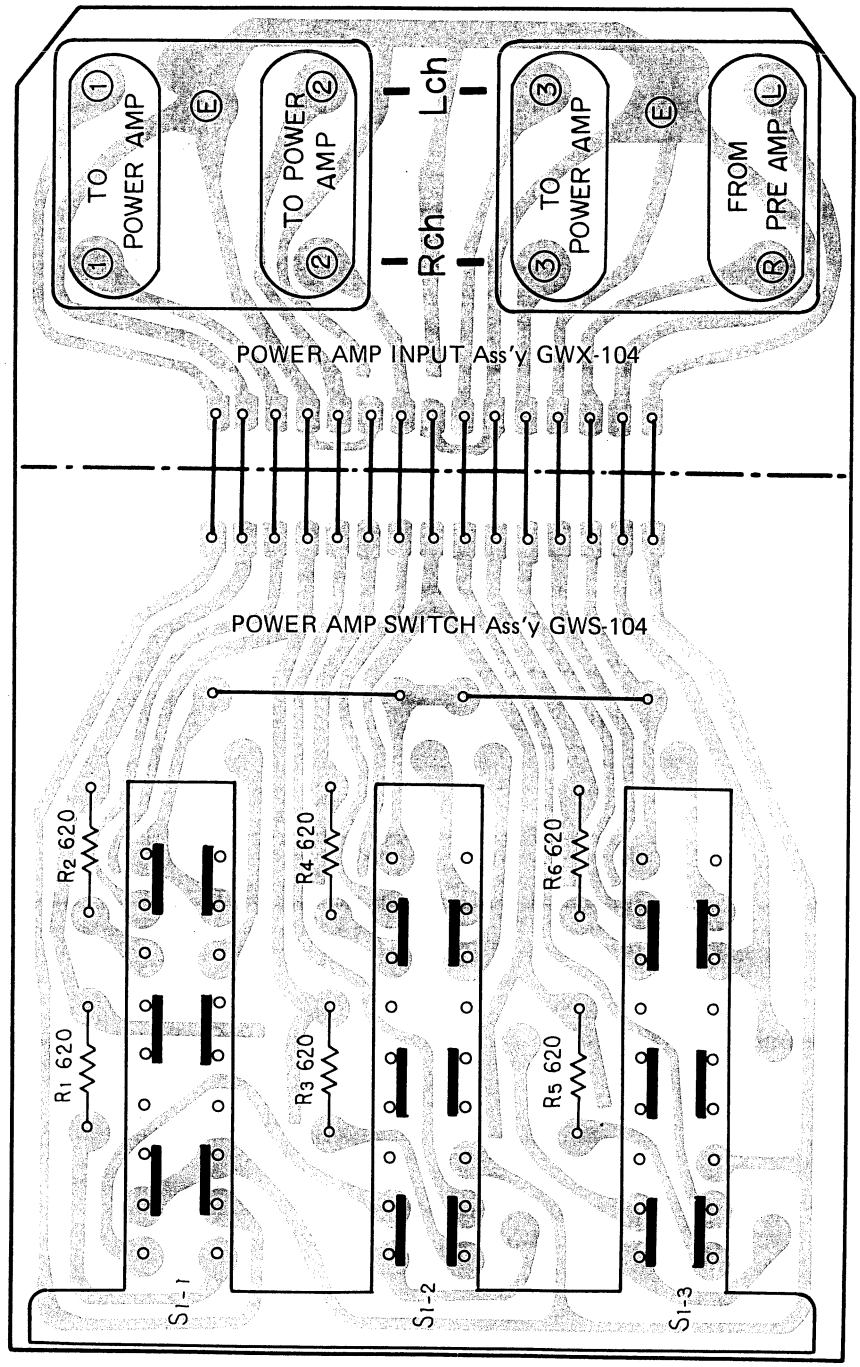
SWITCH

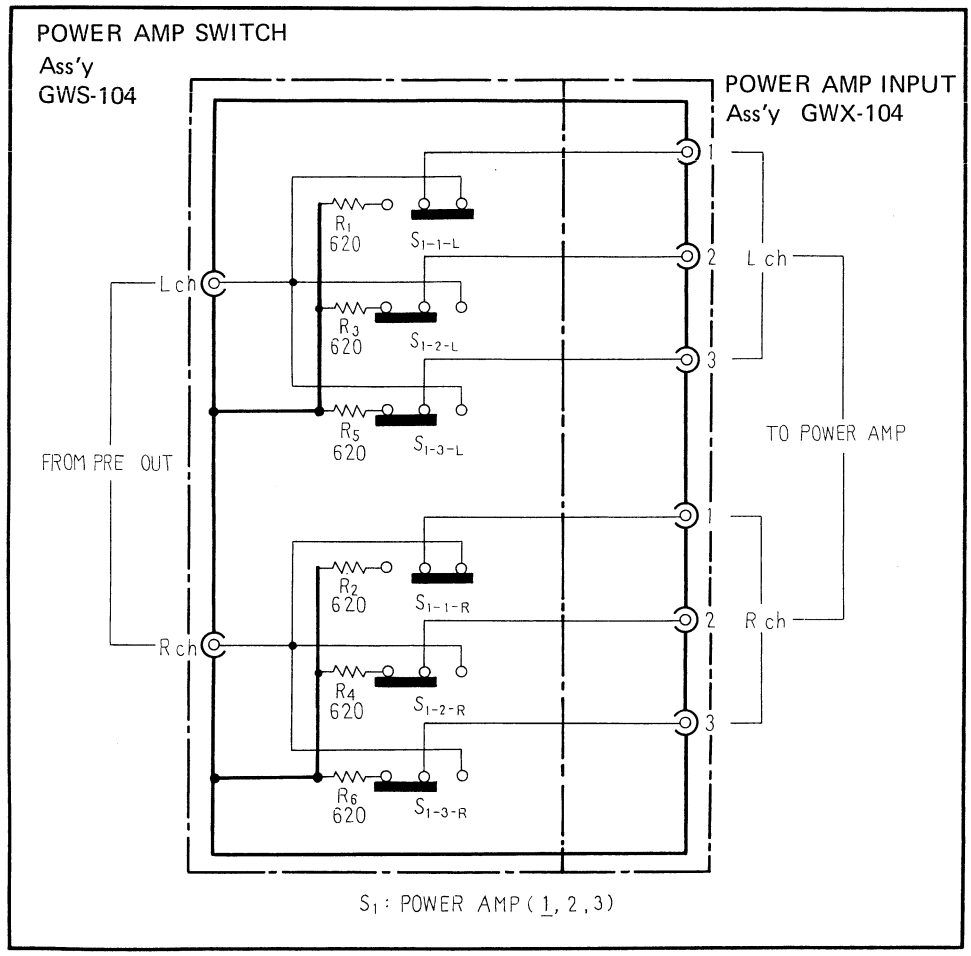
Symbol	Description	Part No.
S1	Push switch (PHONO)	ASG-107

PHONO INPUT Assembly (GWX-104)

Symbol	Description	Part No.
	Input-terminal (4P)	AKB-023

9.3 POWER AMPLIFIER SWITCH





POWER AMPLIFIER SWITCH ASSEMBLY (GWS-104)

RESISTORS

Symbol	Description		Part No.
R1	Carbon film	620	RD¼PM 621J
R2	Carbon film	620	RD¼PM 621J
R3	Carbon film	620	RD¼PM 621J
R4	Carbon film	620	RD¼PM 621J
R5	Carbon film	620	RD¼PM 621J
R6	Carbon film	620	RD¼PM 621J

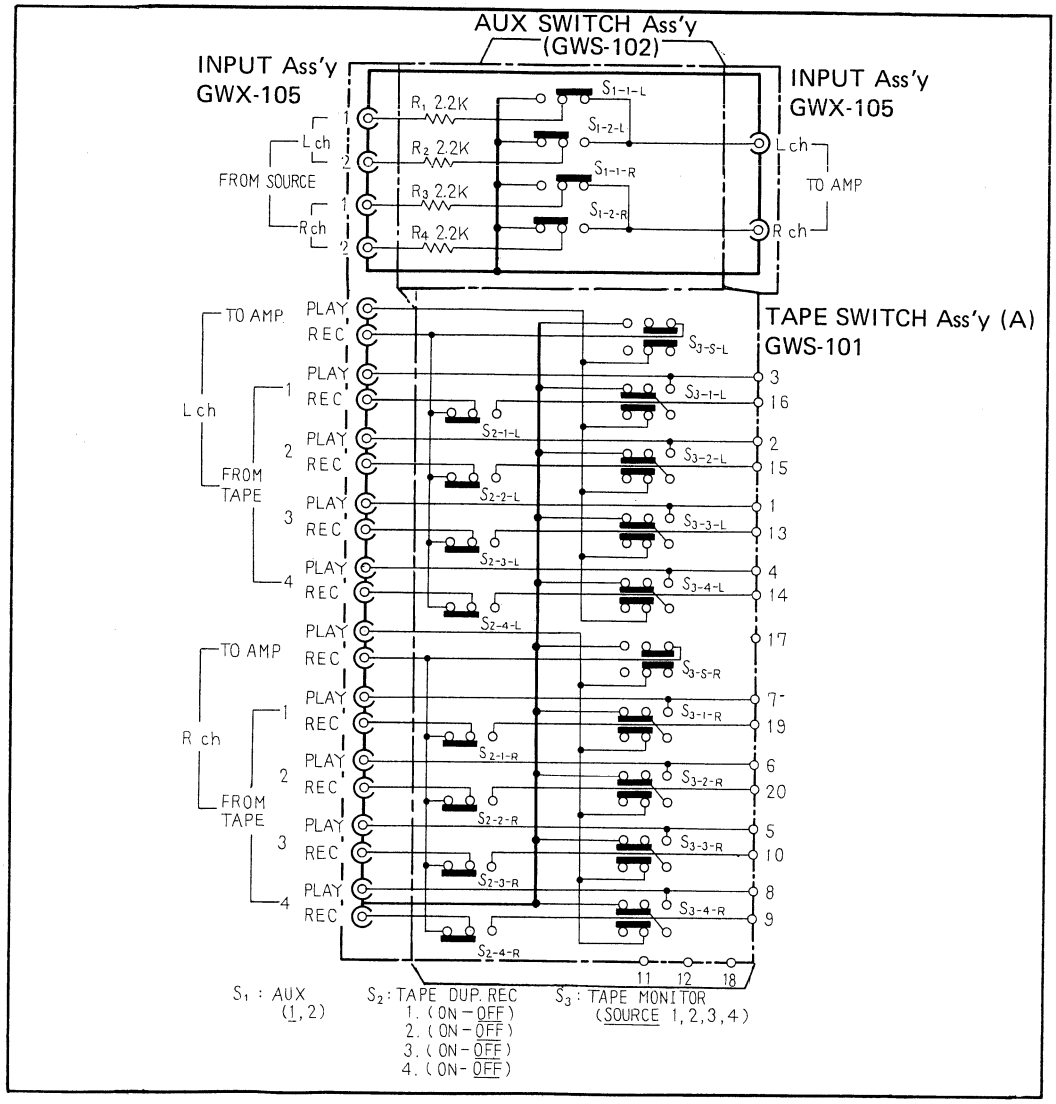
SWITCH

Symbol	Description	Part No.
S1	Push switch (POWER AMP)	ASG-108

POWER AMPLIFIER INPUT ASSEMBLY (GWX-104)

Symbol	Description	Part No.
	Input-terminal (4P)	AKB-023

9.5 TAPE SWITCH A



INPUT ASSEMBLY (GWX-105)

Symbol	Description	Part No.
	Input-terminal (4P)	AKB-023
	Input-terminal (6P)	AKB-024

TAPE SWITCH ASSEMBLY (A) (GWS-101)

Symbol	Description	Part No.
S2	Push switch (TAPE MONITOR)	ASG-111
S3	Push switch (TAPE DUPLICATE REC)	ASG-110
	6P Socket	AKP-015
	4P Socket	AKP-014

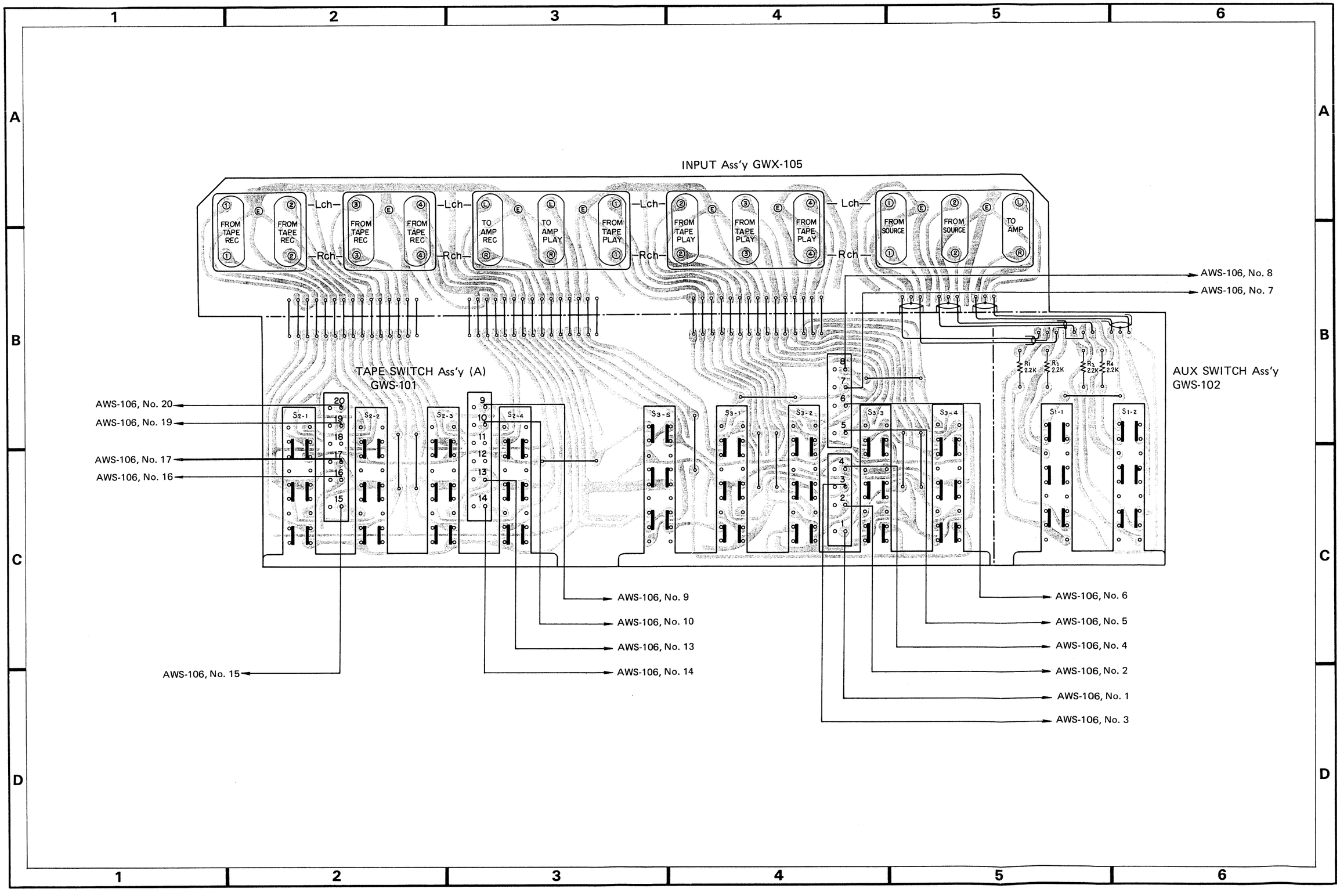
AUX SWITCH ASSEMBLY (GWS-102)

RESISTORS

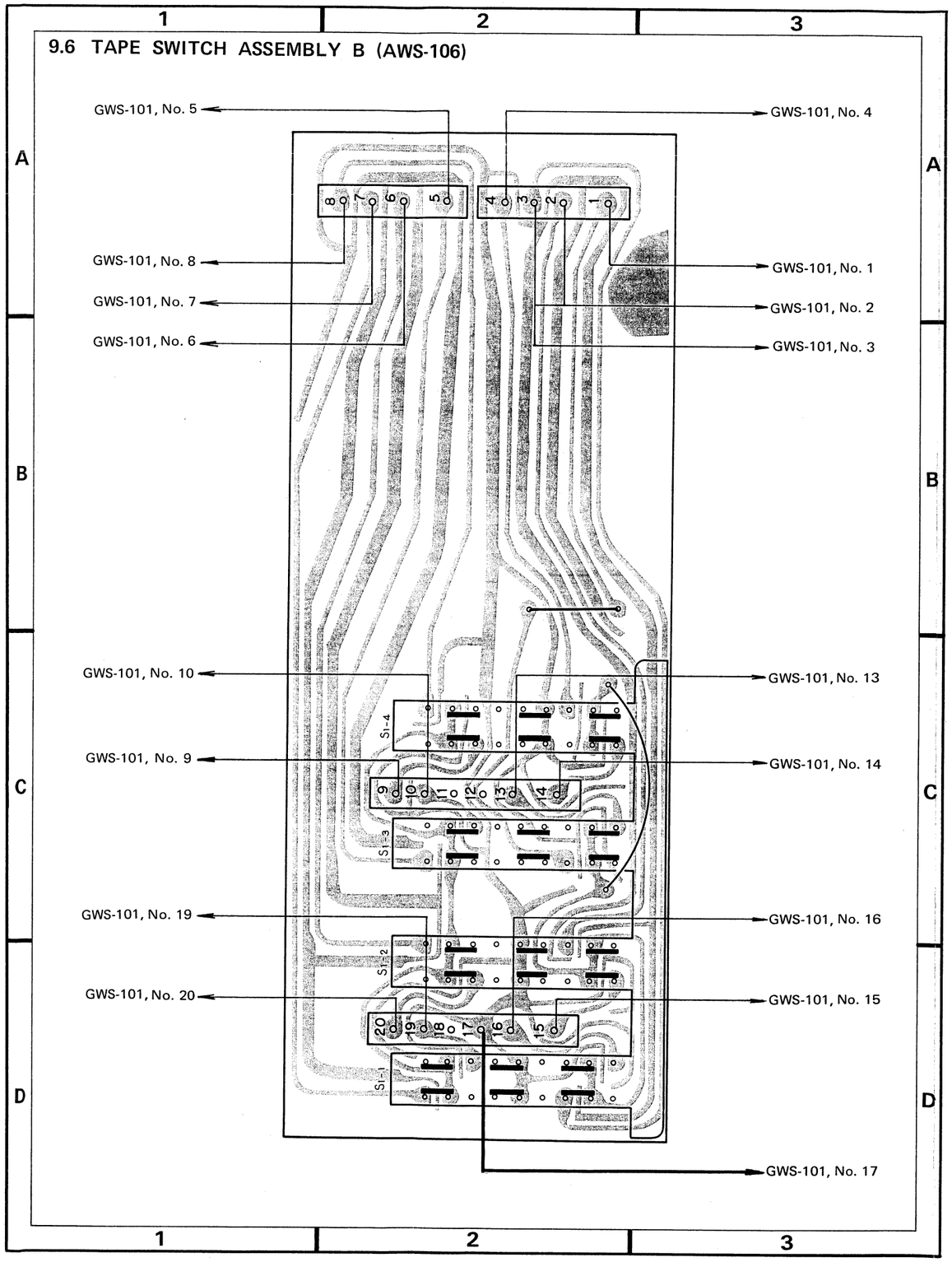
Symbol	Description		Part No.
R1	Carbon film	2.2k	RD¼PM 222J
R2	Carbon film	2.2k	RD¼PM 222J
R3	Carbon film	2.2k	RD¼PM 222J
R4	Carbon film	2.2k	RD¼PM 222J

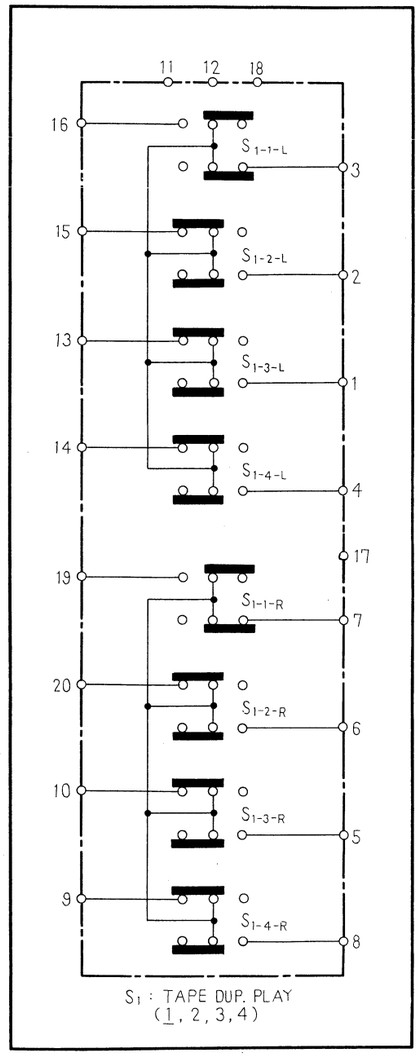
SWITCH

Symbol	Description	Part No.
S1	Push switch (AUX)	ASG-109


INPUT Ass'y GWX-105
FROM TAPE REC
FROM TAPE REC
FROM TAPE REC
FROM TAPE REC
TO AMP REC
TO AMP PLAY
FROM TAPE PLAY
FROM TAPE PLAY
FROM TAPE PLAY
FROM TAPE PLAY
FROM SOURCE
FROM SOURCE
TO AMP
Lch
Rch
TAPE SWITCH Ass'y (A)
GWS-101
AUX SWITCH Ass'y
GWS-102
R1 2.2K
R2 2.2K
R3 2.2K
R4 2.2K
AWS-106, No. 8
AWS-106, No. 7
AWS-106, No. 20
AWS-106, No. 19
AWS-106, No. 17
AWS-106, No. 16
AWS-106, No. 15
AWS-106, No. 9
AWS-106, No. 10
AWS-106, No. 13
AWS-106, No. 14
AWS-106, No. 6
AWS-106, No. 5
AWS-106, No. 4
AWS-106, No. 2
AWS-106, No. 1
AWS-106, No. 3

9.6 TAPE SWITCH ASSEMBLY B (AWS-106)

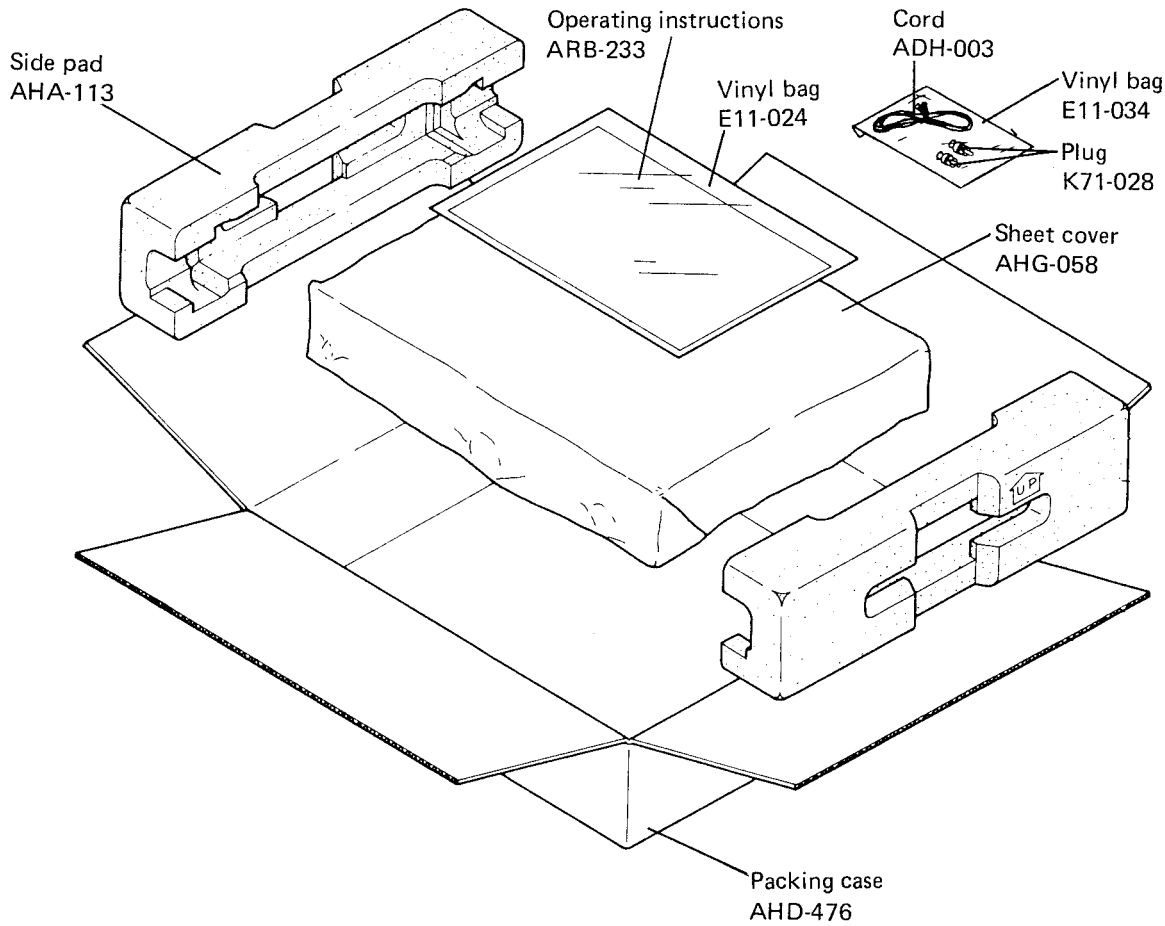




TAPE SWITCH ASSEMBLY (AWS-106)

Symbol	Description	Part No.
S1	Push switch (DUPLICATE PLAY)	ASG-112
	4P Plug	AKM-037
	6P Plug	AKM-038

10. PACKING


Side pad
AHA-113
Operating instructions
ARB-233
Vinyl bag
E11-024
Cord
ADH-003
Vinyl bag
E11-034
Plug
K71-028
Sheet cover
AHG-058
UP
Packing case
AHD-476